

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (previously presented): A method for compensating signal changes of a plurality of single signals forming an optical wavelength-division multiplex signal caused by cross phase modulation in a fiber amplifier, said method comprising the steps of:

coupling out a part of the entire optical wavelength-division multiplex signal;

generating a control signal from the part of said optical wavelength-division multiplex signal, said control signal controlling a phase modulator; and

supplying said optical wavelength-division multiplex signal to said phase modulator and modulating the optical wavelength-division multiplex signal by said control signal such that signal changes of said plurality of single signals caused by cross phase modulation are at least largely compensated.

Claim 2 (original): The method as claimed in claim 1, further comprising the steps of:

tapping an optical measurement signal off of said optical wavelength-division multiplex signal;

converting said optical measurement signal by opto-electrical conversion into an electrical measurement signal; and

converting said electrical measurement signal into said control signal by an adjustable amplifier.

Claim 3 (previously presented): The method as claimed in claim 2, further comprising the step of delaying said optical wavelength-division multiplex signal supplied to said phase modulator with respect to said optical measurement signal.

Claim 4 (original): The method as claimed in claim 1, further comprising the step of measuring signal changes at an output of said phase modulator and controlling said control signal.

BEST AVAILABLE COPY

Claim 5 (previously presented): An arrangement for compensating signal changes of a plurality of single signals forming an optical wavelength-division multiplex signal caused by cross phase modulation in a fiber amplifier, having a control circuit comprising:

a measurement coupler which couples out a part of said entire wavelength-division multiplex signal as an optical measurement signal;

an opto-electrical converter which converts said optical measurement signal into an electrical measurement signal;

an electrical amplifier that has an input supplied by said electrical measurement signal and an output which is an amplified measurement signal as a control signal; and

a phase modulator having a signal input and a modulation input, said wavelength-division multiplex signal being supplied to said signal input, and said control signal being supplied to said modulation input, a gain being selected such that signal changes of said plurality of single signal by cross phase modulation are at least largely compensated when said phase modulator outputs a wavelength-division multiplex signal.

Claim 6 (original): The arrangement as claimed in claim 5, wherein said electrical amplifier is adjustable.

Claim 7 (original): The arrangement as claimed in claim 5, wherein said wavelength-division multiplex signal is delayed between said measurement coupler and said phase modulator.

Claim 8 (original): The arrangement as claimed in claim 5, wherein at least one of said measurement coupler and said phase modulator is inserted between a number of sections of an amplifier fiber.

Claim 9 (original): The arrangement as claimed in claim 5, wherein said arrangement is connected immediately before or after said fiber amplifier.

Claim 10 (new): A method for compensating signal changes of a plurality of single signals forming an optical wavelength-division multiplex signal caused by cross phase modulation in a fiber amplifier, the method comprising:

coupling out a portion of the entire optical wavelength-division multiplex signal, wherein the coupled out portion of the optical wavelength-division multiplex signal contains a portion of each wavelength of the optical wavelength-division multiplex signal;

generating a control signal from the portion of the optical wavelength-division multiplex signal, the control signal controlling a phase modulator; and

supplying the optical wavelength-division multiplex signal to the phase modulator and modulating the optical wavelength-division multiplex signal by the control signal such that signal changes of the plurality of single signals caused by cross phase modulation are at least largely compensated.

Claim 11 (new): An arrangement for compensating signal changes of a plurality of single signals forming an optical wavelength-division multiplex signal caused by cross phase modulation in a fiber amplifier comprising:

a measurement coupler that couples out a part of the entire wavelength-division multiplex signal as an optical measurement signal wherein the coupled out portion of the optical wavelength-division multiplex signal contains a portion of each wavelength of the optical wavelength-division multiplex signal;

an opto-electrical converter that converts the optical measurement signal into an electrical measurement signal;

an electrical amplifier that has an input supplied by said electrical measurement signal and an output that is an amplified measurement signal as a control signal; and

a phase modulator having a signal input and a modulation input, the wavelength-division multiplex signal being supplied to said signal input, and the control signal being supplied to said modulation input, a gain being selected such that signal changes of said plurality of single signal by cross phase modulation are at least largely compensated when said phase modulator outputs a wavelength-division multiplex signal.